KARIN IMMERGUT, OSB #96314
United States Attorney
STEVE ODELL, OSB #90353
Assistant United States Attorney
District of Oregon
600 United States Courthouse
1000 SW. Third Avenue
Portland, OR 97204-2902
(503) 727-1000

SETH M. BARSKY
Assistant Section Chief
ROBERT L. GULLEY
Senior Trial Attorney
RUTH ANN LOWERY
Trial Attorney
Wildlife & Marine Resources Section
Benjamin Franklin Station, P.O. Box 7369
Washington, DC 20044-7369
(202) 305-0217 (ph)
(202) 305-0275 ((fax)

Attorneys for Defendant

UNITED STATES DISTRICT COURT
DISTRICT OF OREGON

NATIONAL WILDLIFE FED'N, et al., Plaintiffs, v. NATIONAL MARINE FISHERIES SERVICE and UNITED STATES ARMY CORPS OF ENGINEERS, Defendants.	Civ No. 01-00640-RE Second Declaration of Paul E. Norman (Preliminary Injunction)

I, Paul E. Norman, declare as follows:

1. I am the Senior Vice President of the Power Business Line at the Bonneville Power Administration (BPA). I graduated from Huxley College in 1974 with a Bachelor of Science degree in Environmental Planning. I completed course work at Portland State University in 1980 for a Master of Science degree in Economics. From

October 1975 to January 1982, I was an economist with the Army Corps of Engineers in Portland, Oregon, where I conducted benefit/cost analyses for new hydropower developments and other civil works projects. I also developed economic and social impact sections of environmental assessments and developed national guidance for Federal agency economic evaluation of power projects.

2. I have worked for BPA on a full-time basis since January 1982. From 1982 to 1985 I was assigned to the Resource Planning Division where I conducted and supervised economic analyses leading to termination of two Pacific Northwest (PNW) nuclear plans, among other projects. From 1986 to 1992 I was Chief of BPA's Planning Branch. One of the three sections under my supervision prepared BPA's Resource Program plans. Another section evaluated potential resource acquisitions under the Competitive Acquisition, Billing Credits, Resource Contingency Unsolicited Resource programs. Another section conducted policy analyses on a variety of resource and market issues. From February to July 1989 I was temporarily detailed to the Division of Power Supply where I served as Deputy Director. From May, 1993 to May, 1994 I was temporarily detailed to the Administrator's Office where I managed the development of BPA's Draft Business Plan. From May, 1994 to September 1996, I was Segment Manager for the generating public utilities and independent power producers. From October 1996 to January 1998 I was VP for Requirements Power Marketing. Since February 1998 I have been the Senior VP for BPA's Power Business Line.

3. My declaration has 8 sections. First, section A is an introduction and provides some background information on BPA's rate-setting process. Second, in section B, I set context by describing the rate impacts of the total BPA fish and wildlife program under the 2004 BiOp. Third, in section C, I discuss the effects of additional

fish and wildlife costs resulting from the Plaintiffs' proposal on power rates and retail utility bills. Then, in section D, I discuss how the likely rate effect would affect households in the PNW Fifth, in section E, I discuss the possible effect of the Plaintiffs' proposal on BPA's ability to pay the U.S. Treasury this fiscal year. In section F, I discuss the likely increase in emissions of pollutants and greenhouse gasses from the generation that would operate to replace the lost generation on the hydro system. In section G, I discuss how the Plaintiffs' motion could significantly impede regional renewable resource development. The last section provides a conclusion.

A. Introduction and Background

4. By law, BPA's power rates are determined by the costs of the Federal Columbia River Power System (FCRPS). BPA must set rates to recover its costs including those associated with acquisition, conservation, and transmission of electric power, including repaying the U.S. Treasury for its investment in the FCRPS. In addition, rates must recover any costs incurred by the Administrator in carrying out the provisions of the NW Power Act and other relevant legislation. Any increases in those costs will cause BPA's wholesale power rates to be higher than they would otherwise be.

5. The Plaintiffs, in their request for injunctive relief, stated that their proposal "would limit power production to some extent." As described later in this declaration and in Mr. Roger Schiewe's second declaration, the limitations on power production are large and would cause BPA's power rates to be much higher than they would otherwise be. Higher rates caused by the Plaintiffs' request may mean a larger rate increase, or a smaller rate decrease, depending on the circumstances. For example, BPA was able to decrease rates by 1.6% for FY 2006 despite the court-ordered increment of summer spill and the sixth below-average water year in a row. This was only possible

due to strong spring precipitation and sustained high market prices – higher than any we've seen since the West Coast energy crisis. These conditions offset the loss of power generation due to incremental spill and low water conditions for the year. Without the additional court-ordered spill, BPA would have been able to decrease its wholesale power rate for FY 2006 by 6 percent. So, court-ordered spill in 2005 caused BPA to set rates 4.5% higher than they otherwise would have been set.

6. In his second declaration, Mr. Roger Schiewe estimates the additional costs of operating the FCRPS according to the request from the Plaintiffs. The costs contained in Mr. Schiewe's second declaration are the basis for the estimates of rate and regional economic impacts presented in this declaration.

B. Fish and Wildlife Program Costs Incurred by BPA Under the 2004 BiOp, Absent Any Additional 2006 Operational Measures, Are a Significant Driver of BPA's Wholesale Power Rates to Northwest Utilities

7. As context for the assessment of cost and rate impacts of the proposed action, I will summarize the cost and rate impacts of BPA's current fish and wildlife recovery program under the 2004 BiOp. Since the Northwest Electric Power Planning and Conservation Act (Northwest Power Act) was passed in 1980, BPA's annual costs for fish and wildlife have increased significantly from annual costs in the range of $50 to $100 million during the 1980's to $690 million per year in the upcoming FY 2007-09 rate period under the 2004 BiOp.

8. For the purpose of this declaration I am defining "costs" to include the direct program costs overseen by the Regional Council, fish-related Operation and Maintenance (O&M) costs of the Corps and Bureau, hatchery costs, and depreciation and net interest on capital investments. In addition, "costs" include the costs of purchasing

power on the market to meet contractual load obligations, as well as the revenues that BPA is unable to earn due to operational constraints created by fish measures. When setting power rates, BPA considers its entire set of costs and then "credits" revenues from marketing power in the wholesale market to the cost total before calculating its cost-based rate. Hence, lost revenues have the same effect on BPA's rates as cash outlays.

9. As stated above, the total annual cost of BPA's fish and wildlife program, which is predominately for fish recovery, is approximately $690 million for fiscal years (FY) 2007-2009. Approximately $75 million of this cost is covered by credits from the U.S. Treasury that cover the non-power portion of BPA's direct program expenses and capital expenses, as well as fish-related power purchase costs, as required by the Northwest Power Act, leaving approximately $615 million to be recovered from regional ratepayers.

10. These large and growing costs reflect a significant expansion of BPA's fish and wildlife activities. BPA implements an extensive fish and wildlife mitigation program in conjunction with the Northwest Power and Conservation Council (Council). The Council, which represents the four Northwest states, developed the Columbia Basin Fish and Wildlife Program. BPA and the Council solicit projects for the program through an open and public process. Proposals are submitted to a scientific review panel for scrutiny. Once recommended by the Council, BPA implements the projects through contracts with Columbia Basin tribes, states, other federal agencies, universities, and private vendors. These projects cover a large range of activities for fish and wildlife, from repairing spawning habitat, studying fish diseases and controlling predators to the acquisition of in-stream water rights or ecologically significant lands for protection. All together, BPA funds over 500 projects in the Columbia River Basin.

11. The $690 million estimate of the FY 2007 total cost of the fish and wildlife program under the 2004 BiOp was developed prior to the increase in market prices for power that occurred over the last year. If this estimate were updated to reflect current market prices, it would be substantially higher. The estimate of incremental costs for the plaintiffs' proposed operation does reflect current best estimates of 2006 market prices.

12. The fish and wildlife costs under the 2004 BiOp are a significant component of BPA's total costs. In its recent Power Function Review, BPA presented its costs to the region in 12[1] major categories. Among these categories, the $690 million of fish and wildlife costs are second in magnitude only to the total combined debt service costs for BPA's one active nuclear plant, two retired nuclear plants, and the federal investment in the entire FCRPS. The $323 million per year of financial benefits to the residential and small-farm consumers of the region's six investor-owned utilities is a distant third in magnitude The total costs of the fish and wildlife program are roughly twice the level of costs of operating and maintaining the 31 dams on the federal system. The Final Report from the Power Function Review can be found on BPA's Web site at www.bpa.gov/power/review

13. If this total fish and wildlife cost charged to ratepayers of approximately $615 M did not exist, BPA's power rates would be nearly $10 per megawatt-hour ($10/MWh) lower. This would represent a drop in BPA's expected wholesale power rate for FY 2007 of roughly 30 percent. To put this figure in perspective, a typical household that purchases 1000 kWh of electricity a month from one of the nearly 100 public utilities

[1] The twelve categories are: Renewables Program, Conservation Program, Internal Operations charged to Power Rates, Other, Transmission and Ancillary Services, IOU Settlement Payments, Fish and Wildlife Direct Program (a component of the total program described in paragraph 8 of this declaration), Corps and Reclamation O&M, Columbia Generating Station O&M, Debt Management, All Power Purchases, and Long Term Generating Projects.

that buy almost all of their electricity from BPA pays approximately $10 a month more in its electric bill due to the cost of this program under the 2004 BiOp. Households served by utilities that buy a smaller percentage of their power from BPA pay a proportionately smaller monthly cost for the fish and wildlife program.

C. Plaintiffs' Requested Operations Would Cause BPA's Power Rates to be Substantially Higher

14. In his second declaration, Mr. Schiewe has estimated the additional costs of operating the FCRPS according to the request from the Plaintiffs. The actions recommended by the Plaintiffs for FY 2006 would cause a loss of electric energy production from the FCRPS as well as a shift in the distribution of generation from months of higher value to months of lower value, leading to increased power purchase costs and loss of revenues from surplus sales. It has been estimated that the Plaintiffs' request for 2006 operations would increase BPA's costs by $347 million, assuming that 2006 is an "average" water year (with a potential range from a gain of $28 million to a loss of $541 million), and assuming that BPA must operate the system to the upper rule curve (see Schiewe second declaration). Approximately $45 million of these costs are expected to be covered by credits from the U.S. Treasury, leaving $302 million to be recovered from ratepayers. This estimate includes no allowance for costs that BPA could incur as a result of power and other losses to Canada due to the proposed operation.

15. When setting its wholesale power rates, BPA uses models that account for the wide variability in hydro conditions and market prices that might occur in any particular year. For example, over the last 10 years, the Columbia River has seen a variety of water years, including one of about 60 million acre-feet (MAF) of total flow as measured at The Dalles Dam, and another of 155 MAF – nearly a 300% difference.

Prices also vary considerably and have reached lows in the $20/MWh range and risen above $100/MWh recently. When setting rates, BPA tests rate levels and design alternatives relative to established financial and risk tolerance parameters. Due to the short time allowed to provide the analysis to the Court, we have been unable to precisely analyze the impacts of the proposed changes in operations on BPA's finances and associated rate impacts through this full analysis. However, I believe that the analysis that follows, though less precise, characterizes the financial and economic impacts of these operational changes reasonably well.

16. Absent the operations proposed by the Plaintiffs, exceedingly good financial results for FY 2006 due to an average water year and sustained high market prices could mean a rate reduction in FY 2007, while another in a string of below average water years would most likely result in a rate increase. If all of the additional FY 2006 operational costs created by the Plaintiffs' request were recovered in FY 2007 rates, as is reasonably likely, those rates would be approximately $5/MWh higher than they would otherwise be with the 2004 BiOp operation.[2] This increase would be on top of the $10/MWh cost of the current fish and wildlife program that is already in BPA's power rates.[3]

[2] It is possible that not all of the rate impact will occur in 2007 due to the proposed adjustable rate design. This delay of the rate impact could occur if BPA's net revenues for 2006 are sufficiently high due to good water conditions and high market prices to offset the costs of the Plaintiffs' request for that year. In this case, all or a part of the rate impact would simply be deferred to a subsequent year or years.

[3] BPA has proposed adjustable rates for FY 2007-2009. This means that power rates, once set at a "base" level, can be adjusted upward or downward each year as a function of the financial outcome of the previous year. These financial results will be a function of several factors, such as market prices, hydro conditions, and the impact of additional costs for fish operations.

17. With the Plaintiffs' proposal, the total cost of BPA's fish and wildlife program in FY 2007 would move from the current $690 million to approximately $1 billion. The rate impact of the total program could go from approximately $10/MWh to approximately $15/MWh. The impact of fish and wildlife program costs on BPA's wholesale power rate would move up from approximately 30% to just over 40% of the total rate. The average household that is served by one of BPA's 100 full-service utilities and that consumes 1000 kWh per month could see its costs for BPA fish and wildlife programs rise from approximately $10 per month to approximately $15 per month.

D. Effect of Rate Increases on Consumers of Power and the PNW Economy

18. Higher rates for FY 2007 due to the Plaintiffs' request would occur at a very difficult time given the rapid rise in energy prices of late. Low income households, in particular, will suffer – both through electricity prices and heating costs as they begin to reflect the recent run-up in natural gas prices. A BPA rate increase would undoubtedly make it more difficult for low-income families to make ends meet, especially given the large run-up in other energy prices. Both because electricity has historically been low-cost relative to other energy sources, and because the capital cost of electric heating systems are low, low-income households are disproportionately heated by electricity. Therefore, they will feel a disproportionately larger impact from a significant rate increase. Approximately one fourth of the region's families are considered low-income (income less than 200% of the federal poverty level). Implementation of the Plaintiffs' request will therefore have the effect of placing a disproportionately large share of the added burden on the shoulders of those least equipped to deal with it.

19. I believe that the additional costs of implementing the Plaintiffs' requested operations would in fact create further economic hardship for electricity consumers

served by BPA's wholesale customers. BPA is struggling to avoid a rate increase between this rate period and the next, after a nearly 50 percent increase in 2002 that resulted from the West Coast energy crisis of 2001. BPA's power rates have declined since then, in spite of a continued series of below-average water years, and are now about 30 percent above rates in 2001. BPA's power rates for FY 2002-2006 can be seen at www.bpa.gov/power/rates. The rate increase in 2002 contributed significantly to an economic downturn in the region. The regional economy is just recently showing signs stabilizing.

20. BPA sells most of its power to public utilities in the PNW. Increases in BPA's wholesale power rates will likely cause most utilities to increase the retail rates that they charge their consumers. Industrial customers will need to increase the price of the products that they produce. While it is true that the Northwest has historically had some of the lowest retail rates in the nation, retail rates have been rising. Relatively lower retail rates do not necessarily mean that the regional economy can easily sustain additional incremental costs, because low rates are a foundation of the regional economy. Furthermore, the effects of BPA's rate increases are not necessarily felt evenly across the region. Roughly speaking, the majority of the revenues collected through BPA's power rates paid by public utilities come from the rural parts of Oregon and Washington, as well as the portions of Idaho and Montana that BPA serves. These areas tend to have weaker economies dominated by agriculture and ranching and tend to have a difficult time absorbing any rate increase from BPA.

E. The Plaintiffs' Proposal Could Jeopardize BPA's Ability to Make its Annual Payment to the U.S. Treasury in September 2006

21. The fundamental measure of BPA's financial integrity is the probability of making its annual debt service payment to the U.S. Treasury at the end of each fiscal year. BPA's current estimate is that it has only a 1% chance of failing to make its Treasury payment at the end of FY2006 without the Plaintiffs' proposal. This probability of failing to make its Treasury payment rises to over 12% with the plaintiffs' proposal because of the severe costs of that proposal, and because BPA cannot adjust its rates in 2006 to offset the increase in costs.

22. The declaration of John Wellschlager describes the emergency actions and procedures the Army Corps of Engineers, Bureau of Reclamation, and BPA will undertake to maintain generation and transmission reliability. The declaration describes how these agencies must respond to meet an actual or projected insufficiency in generation or transmission resources to maintain reliability. To avoid emergency hydroelectric operations, BPA will seek to purchase additional energy/capacity on the open market. Declaration of John Wellschlager.

23. However, financial losses created by the Plaintiffs' requested operations may prevent BPA from purchasing needed energy. BPA maintains cash reserves sufficient, based on its projections of market conditions, to purchase power in excess of that generated from federal hydroelectric projects and the Columbia Generating Station nuclear plant to meet BPA's load. However, if the price for purchasing power is substantially above expectations, BPA's reserves may be insufficient to enable it to purchase needed power and meet its other responsibilities. This situation would present

BPA with a choice between calling for emergency operations, or failing to meet loads, resulting in power outages.

F. The Plaintiffs' Proposal Would Add Significantly to Air Pollution

25. The Plaintiffs' proposed 2006 operation would have an impact on air quality in the West. Federal and Non-Federal hydro projects do not emit pollutants or green house gasses such as carbon dioxide (CO_2), nitrogen oxide (NO_x) and sulfur dioxide (SO_2). In contrast, the resources that would replace the lost hydro generation do emit these gasses.

26. A detailed analysis of regional resources and loads would be required to precisely establish the resource mix and load changes that would result from the Plaintiffs' proposal. There is also the possibility that a small portion of the losses will be offset by demand reductions that will not create additional emissions. There are, however, proxies for the mix of replacement resources and some useful benchmarks available that can be used to approximate the magnitude of the emissions impact. Incremental generation will be limited to resources that are currently available and not already generating. In contrast, low emission resources such as wind and nuclear are already committed, and hydro generation is limited by the availability of water and consequently could not replace the lost generation. This leaves natural gas and coal resources as the most likely substitutes[4].

27. In the time available BPA was able only to develop a wide range of estimates of incremental air emissions due to Plaintiffs' proposal. The Northwest Power

[4] While it is conceivable that the non-affected hydro will alter dispatch patterns in response to the Plaintiffs' operation, the limited storage and water dependent nature of hydro generation will only time-shift the emissions impacts. When the "replacement" hydro resource reaches the period when it would have otherwise used that water for generation purposes the emissions increases will still occur.

and Conservation Council's (NWPCC) 5th Power Plan[5] and the State of Washington 2004 Electricity Fuel Mix Report[6] contain information that helps to roughly translate a megawatt hour of electricity generation into air emissions for gas and coal resources. The NWPCC factors used here likely represent an extreme low end for this analysis since they represent emissions from new low-emission gas-fired plants, not emissions from existing resources that would actually replace the hydro generation. The State of Washington data may result in emissions that are too high because its use results in the assumption that the overall set of replacement resources will be the mix of emitting resources that operated in Washington in 2004. Taken together they provide bookends with regard to potential emission impacts.

28. The NWPCC data and the Washington Electricity Fuel Report can each be reduced to an emission level per megawatt hour of electricity production. Because the Fuel Report data is aggregate the assumed resource proportions are fixed at the reported levels[7]. For the calculations using the NWPCC data a very conservative assumption from an emission standpoint is that combined cycle natural gas will be the dominant replacement resource[8]. Each of these melded emission rates were then multiplied by the average, maximum and minimum difference in annual megawatt hour generation between the Biological Opinion operation and the Plaintiffs' proposed 2006 operation for the coordinated U.S. hydro system as described in Mr. Schiewe's second declaration. Table 1 summarizes the increases in emissions under the Plaintiffs' proposal compared to emissions under the 2004 BiOp operation.

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[5] Pages I-8, I-27 and I-34 of Appendix I, Fifth Power Plan (http://www.nwcouncil.org/energy/powerplan/)
[6] http://qa.cted.wa.gov/_CTED/documents/ID_2123_Publications.pdf
[7] 33% gas, 64% coal & 3% other
[8] 95% combined cycle natural gas, 5% simple cycle gas and 0% coal

Table 1: Increased air emissions from Plaintiffs' Proposal compared to the 2004 BiOp

Generation Impact	Minimum		50 water yr Average		Maximum	
	WA Fuel	NWPCC	WA Fuel	NWPCC	WA Fuel	NWPCC
NO_x (tons)	6,387	146	8,284	190	14,558	334
SO_2 (tons)	4,251	25	5,514	32	9,690	57
CO_2 (tons)	3,678,000	1,640,000	4,771,000	2,128,000	8,384,000	3,740,000

The results shown in Table 1 vary widely depending on the emissions data source. This is partly due to inclusion of coal in the Washington Fuel Report, but even when a controlling adjustment was made to eliminate the differences in resource mix the NO_x, SO_2, and CO_2 levels using the fuel report were 700%, 300%, and 120% (respectively) of the estimates based on the NWPCC emission factors. These remaining differences may be representative of the higher emissions of the existing resource base. More investigation would be required to resolve this very wide range of estimates. However, under any set of assumptions the emissions impact of the proposed operation is significant.

G. The Plaintiffs' Proposal Could Significantly Impede Regional Renewable Resource Development

29. Another important environmental consequence of the Plaintiffs' proposed operation concerns the ability of the FCRPS to integrate wind power on behalf of regional utilities. Wind power development in this region is uniquely advantaged by the hydro system's ability to smooth out the intermittent output of wind and other renewable resources, thereby making those resources much more useful in meeting electric load, and thereby making them more cost effective. Partly as a result of this, the region has seen hundreds of MW's of windpower installed, with hundreds and even thousands of MWs

more in the planning stage. This flourishing development would be put at risk by the changes in FCRPS operation proposed by the Plaintiffs.

30. Wind is an intermittent resource that requires considerable generation flexibility for reliable integration into the grid. The flexible nature of the hydrosystem - its ability to ramp up and down over different time horizons - makes it ideally suited to wind integration. In fact, BPA has developed a series of wind integration services on behalf of regional utilities to help them manage the variability in wind output. Reductions in load following and regulating capability will place limitations on the amount of wind that can be reliably integrated into the system, or force BPA and other utilities to rely on other (primarily thermal) resources to provide integration services, with commensurate environmental and financial costs.

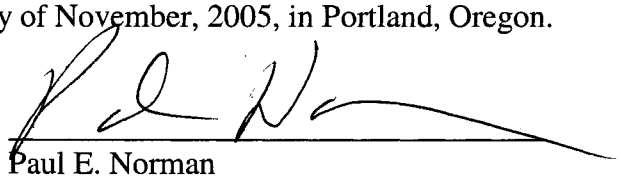
31. BPA has not had time to fully assess the impact of the Plaintiffs' proposal on the system's ability to provide wind integration services. However, it is clear that a substantial reduction in FCRPS flexibility would significantly impair the ability of the hydro system to integrate wind generation, and could thereby become a major impediment to the development of wind resources in the Pacific Northwest.

G. Conclusion

32. I conclude that the Federal system costs associated with the Plaintiffs' request will have a substantial impact on BPA's wholesale power rates and the electricity bills of households served by BPA's customers. This impact will increase the contribution of BPA's fish and wildlife program to the wholesale rate from the current 30 percent to over 40 percent. This impact will disproportionately affect the roughly 30 percent of the region's customers who are considered low-income families.

33. In addition, BPA is 12 times more likely to miss its Treasury payment this year as a result of the Plaintiffs' request for operational changes this year. The resulting probability of missing Treasury of 12 percent far exceeds BPA's general standard for paying Treasury and puts the Agency at significant risk. With a loss of over 600 aMW of hydro generation, additional thermal generation will be needed to replace the hydro in order to meet loads. Replacing hydro generation with thermal generation will add significant incremental quantities of pollutants and greenhouse gasses to the environment to the detriment of air quality in the West. Finally, a reduction in the flexibility of the FCRPS would dramatically reduce the ability of the FCRPS to provide integration services for the region's growing fleet of wind projects.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Executed this 21 day of November, 2005, in Portland, Oregon.



Paul E. Norman